



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,808	11/25/2003	Antony J. Lozier	ZIM0143	6206

43963 7590 01/18/2007  
ZIMMER TECHNOLOGY - BAKER & DANIELS  
111 EAST WAYNE STREET, SUITE 800  
FORT WAYNE, IN 46802

EXAMINER
----------

HOFFMAN, MARY C

ART UNIT	PAPER NUMBER
----------	--------------

3733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

NT

<b>Office Action Summary</b>	<b>Application No.</b> 10/721,808	<b>Applicant(s)</b> LOZIER ET AL.	
	<b>Examiner</b> Mary Hoffman	<b>Art Unit</b> 3733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-26, 34 and 35 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14, 16-24, 26, 34 and 35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/25/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- 1. ☐ Certified copies of the priority documents have been received.
  - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-14, 16-24 and 26, and 34-35 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Foley et al. (U.S. Patent no. 6,676,665).

Foley et al. disclose a reamer (see embodiments FIG. 5-11), comprising a shank, a reamer body having a longitudinal axis, and a blade formed in the reamer body, the blade deformable between a contracted position and an expanded position. The blade comprises at least one deformation point at a predetermined distance along the blade length and the deformation point comprises a discontinuity of the blade. The shank has a radius measured from the longitudinal axis, the blade in the contracted position extending no further from the longitudinal axis than the radius of the shank. The shank has a radius measured from the longitudinal axis, the blade in the expanded position extending further from the longitudinal axis than the radius of the shank. The blade in the contracted position is substantially parallel to the longitudinal axis. The blade in the expanded position comprises a portion oriented radially outward from the longitudinal axis. The at least one deformation point comprises an exterior circumferential relief. The exterior circumferential relief is formed in a proximate end of the blade, the reamer

Art Unit: 3733

further comprises a ring coupled to a distal end of the blade, and the at least one deformation point further comprises an exterior circumferential relief formed in the distal end of the blade. The at least one deformation point comprises at least one interior circumferential relief formed in the blade between the proximate end and the distal end. The at least one deformation point comprises a radially oriented cut in the blade and the at least one deformation point comprises a thinned region or notch. The reamer has a polygonal cross-section. The reamer further comprises an actuating means for moving the blade between the contracted position and the expanded position. The shank is cannulated and the actuating means comprises an elongate member connected to the blade, proximate translation of the elongate member moving the blade from the contracted position to the expanded position, and distal translation of the elongate member moving the blade from the expanded position to the contracted position. The blade is biased to the expanded position and is collapsible to the contracted position upon application of a radially inward force upon the blade.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-14, 16-24 and 26, and 34-35 [see second interpretation], are rejected under 35 U.S.C. 102(e) as being anticipated by Cragg et al. (WO 01/60262), cited by applicant.

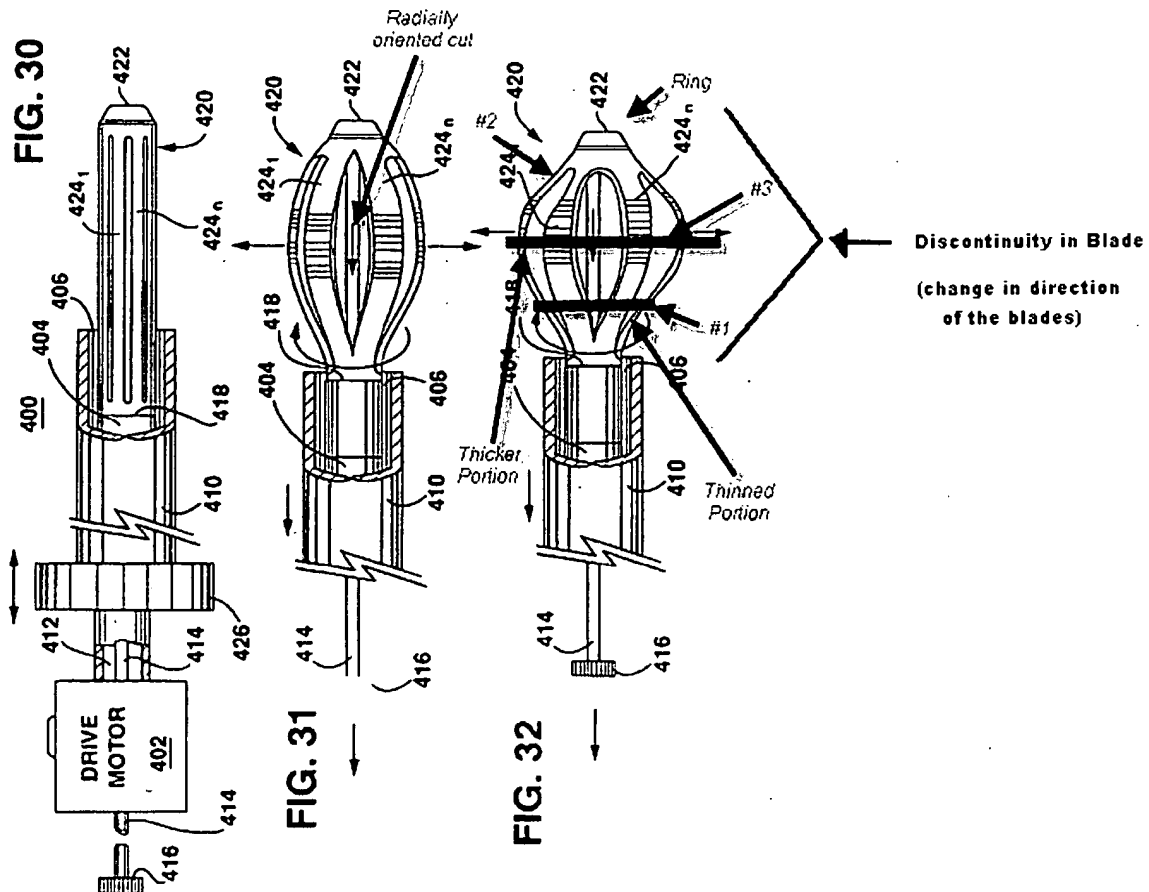
Cragg et al. disclose reamer comprising a shank (ref. #406), a reamer body (ref. #420 (422 and 424)) having a longitudinal axis, and a blade (ref. #424) formed in the

Art Unit: 3733

reamer body, the blade deformable between a contracted position and an expanded position. The blade comprises at least one deformation point (see deformed portion of ref. #424) at a predetermined distance along the blade length and the deformation point comprises a discontinuity of the blade, i.e. when the blade is in the expanded configuration, the inclination of the blade changes direction at the deformation point ref. #424 and therefore is being considered a "discontinuity". The shank has a radius measured from the longitudinal axis, the blade in the contracted position extending no further from the longitudinal axis than the radius of the shank. The shank has a radius measured from the longitudinal axis, the blade in the expanded position extending further from the longitudinal axis than the radius of the shank. The blade in the contracted position is substantially parallel to the longitudinal axis. The blade in the expanded position comprises a portion oriented radially outward from the longitudinal axis. The at least one deformation point comprises an exterior circumferential relief (see #1 in marked-up copy below). The exterior circumferential relief is formed in a proximate end of the blade, the reamer further comprises a ring (ref. #422) coupled to a distal end of the blade, and the at least one deformation point further comprises an exterior circumferential relief formed in the distal end of the blade (see #2 in marked-up copy below). The at least one deformation point comprises at least one interior circumferential relief formed in the blade between the proximate end and the distal end (see #3 in marked-up copy below). The at least one deformation point comprises a radially oriented cut in the blade (see radial slits), and the at least one deformation point comprises a thinned region (regions of deformed portion that have a smaller radius than

Art Unit: 3733

the middle deformed portion, which has the maximum deformation (#1 and #2 in marked-up copy below). The reamer would have a polygonal cross-section (looking down on the expanded reamer would show a asterisk-like or star-like polygonal cross-sectional shape). The reamer of further comprises an actuating means (ref. #404) for moving the blade between the contracted position and the expanded position. The shank is cannulated and the actuating means comprises an elongate member connected to the blade, proximate translation of the elongate member moving the blade from the contracted position to the expanded position, and distal translation of the elongate member moving the blade from the expanded position to the contracted position. The blade is biased to the expanded position and is collapsible to the contracted position upon application of a radially inward force upon the blade. The deformation means for deforming the blade between contracted and expanded positions is by the relative movement of the components and the elasticity of the deformation point of the Cragg et al. reference.



Regarding claims 34 and 35, a different interpretation of this reference is applied as follows:

Cragg et al. disclose reamer comprising a shank (ref. #406), a reamer body (ref. #420 (422 and 424)) having a longitudinal axis, and a blade (ref. #424) formed in the reamer body, the blade deformable between a contracted position and an expanded position. The blade comprises at least one deformation point (see deformed portion of ref. #424) at a predetermined distance along the blade length and the deformation point comprises a discontinuity of the blade, i.e. the radial slit is being considered a "discontinuity" of the blade. The discontinuity comprises a notch.

Art Unit: 3733

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-14, 16-24 and 26, and 34-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnston, Jr. (U.S. Patent No. 6,070,677).

Johnston, Jr. discloses a reamer comprising a shank (FIG. 1), a reamer body (ref. #32,38,44) having a longitudinal axis, and a blade (ref. #23,44) formed in the reamer body, the blade deformable between a contracted position and an expanded position. The blade comprises at least one deformation point (ref. #38) at a predetermined distance along the blade length and the deformation point comprises a discontinuity of the blade. The shank has a radius measured from the longitudinal axis, the blade in the contracted position extending no further from the longitudinal axis than the radius of the shank. The shank has a radius measured from the longitudinal axis, the blade in the expanded position extending further from the longitudinal axis than the radius of the shank. The blade in the contracted position is substantially parallel to the longitudinal axis. The blade in the expanded position comprises a portion oriented radially outward from the longitudinal axis. The at least one deformation point comprises an exterior circumferential relief. The exterior circumferential relief is formed in a proximate end of the blade, the reamer further comprises a ring (ref. #64) coupled to a distal end of the blade, and the at least one deformation point further comprises an exterior circumferential relief formed in the distal end of the blade. The at least one deformation point comprises at least one interior circumferential relief formed in the blade between the proximate end and the distal end. The at least one deformation point comprises a hinge, and the hinge is shown as a pin hinge, however, the specification



states that the hinge can be any known in the art (col. 6, lines 50-55); this would included a radially oriented cut in the blade and the at least one deformation point comprises a thinned region or notch. The reamer has a polygonal cross-section. The reamer of further comprises an actuating means (ref. #20) for moving the blade between the contracted position and the expanded position. The shank is cannulated and the actuating means comprises an elongate member connected to the blade, proximate translation of the elongate member moving the blade from the contracted position to the expanded position, and distal translation of the elongate member moving the blade from the expanded position to the contracted position. The blade is biased to the expanded position and is collapsible to the contracted position upon application of a radially inward force upon the blade. The deformation means for deforming the blade between contracted and expanded positions is by the relative movement of the components and the hinge.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

If Applicant argues that the Johnston, Jr. (U.S. Patent No. 6,070,677) reference used in the above 102(b) rejection does not anticipate the deformation point (i.e. the hinged attachment of the blades), then in the alternative, claims 1-5, 7-14, 16-24 and

26, and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston, Jr. (U.S. Patent No. 6,070,677).

Johnston, Jr. discloses the claimed invention except for a deformation point (i.e. a hinge) that includes a radially oriented cut, a thinned region, or a notch in the blade. Johnston, Jr. discloses a deformation point, or hinge, that employs a hinge pin-type hinge rather than a hinge formed via a radially oriented cut, a thinned region, or a notch in the blade. The reference states that the hinge can be any known in the art (col. 6, lines 50-55). Since both a pin hinge-type hinge as well as a hinge formed by a radially cut, thinned region, or notch, were art-recognized equivalents at the time the invention was made, it would have been obvious to one of ordinary skill in the art to construct the deformation point in the blade of Johnston, Jr. as being a hinge formed via a radially oriented cut, a thinned region, or a notch in the blade.

### ***Response to Arguments***

Applicant's arguments with respect to the claims rejected under Chappuis et al. (U.S. Patent Application 10/052096) have been considered but are moot in view of the new ground(s) of rejection.

Applicant's other arguments filed 10/25/2006 have been fully considered but they are not persuasive.

Applicant argues that Cragg et al. does not disclose a "discontinuity" nor a polygonal cross-section. As explained in the above rejection section, the examiner respectfully disagrees and believes that the Cragg et al. reference does show these

limitations. First, the term "discontinuity" is broad and can mean a variety of things. For example, the change in direction of the angle of inclination of the blades, the point at which this change occurs being at the central deformation point, can be considered a discontinuity. Also, in the second interpretation of the Cragg et al. reference, the radial slits themselves are being considered discontinuities, because by forming the individual metal bands of the blade, the blade itself is interrupted, or non-continuous. Also, the device would have a polygonal cross-section, since the expanded blades would create a cross-section similar to a plus sign, star, or asterisk, depending on the number of radial slits and metal bands present. These are considered to be polygonal shapes, and therefore, the device would have a polygonal cross-section when in it's expanded state.

The rejections are therefore deemed proper.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 3733


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Hoffman whose telephone number is 571-272-5566. The examiner can normally be reached on Monday-Friday 9:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo C. Robert can be reached on 571-272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCH



EDUARDO C. ROBERT  
SUPERVISORY PATENT EXAMINER